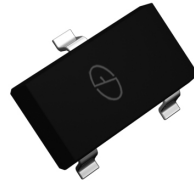
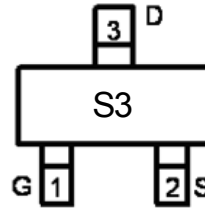


Main Product Characteristics

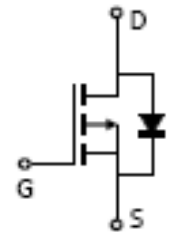
V_{DSS}	-30V
$R_{DS(on)}$	0.19 Ω (max) @-10V
I_D	-1.9A



SOT-23



Marking and Pin Assignment



Schematic Diagram

Features and Benefits

- Advanced MOSFET process technology
- Ideal for DC-DC converter, power management in portable battery, computer, printer, cellular and general purpose applications
- Low on-resistance with low gate charge
- Fast switching and reverse body recovery



Description

The SSF2303 utilizes the latest processing techniques to achieve high cell density and low on-resistance. These features make this device extremely efficient and reliable for use in DC-DC converter, power management in portable battery, computer, printer, cellular and general purpose applications.

Absolute Max Ratings ($T_c = 25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	-30	V
Gate-Source Voltage	V_{GS}	± 20	
Continuous Drain Current	I_D	-1.9	A
Continuous Source-Drain Diode Current	I_S	-0.83	
Maximum Power Dissipation	P_D	0.35	W
Thermal Resistance from Junction to Ambient($t \leq 5s$)	$R_{\theta JA}$	357	$^\circ\text{C/W}$
Junction Temperature	T_J	150	$^\circ\text{C}$
Storage Temperature	T_{STG}	-50 to +150	

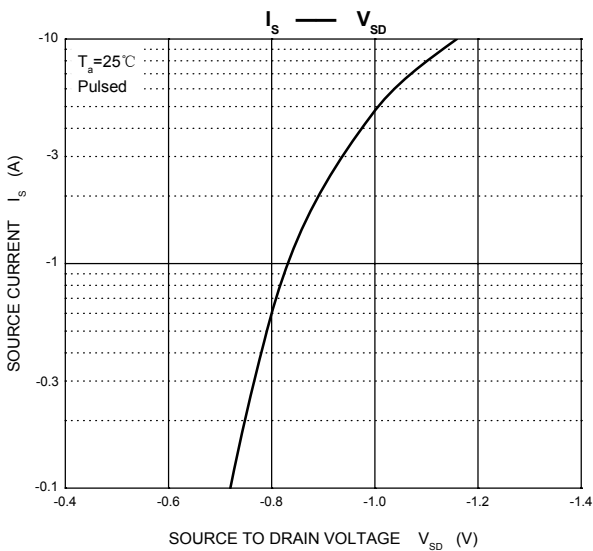
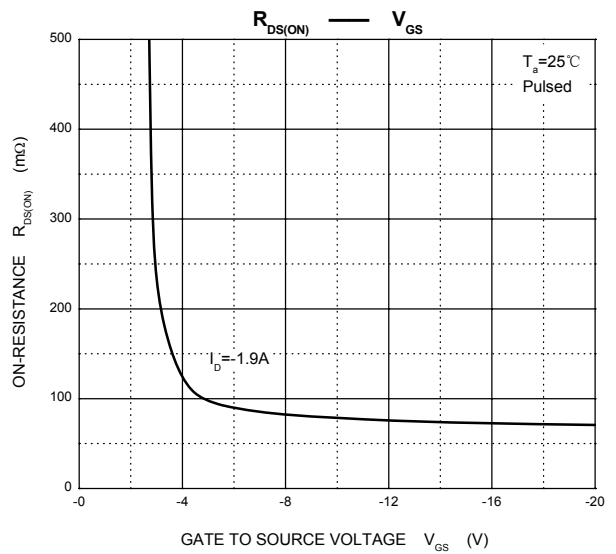
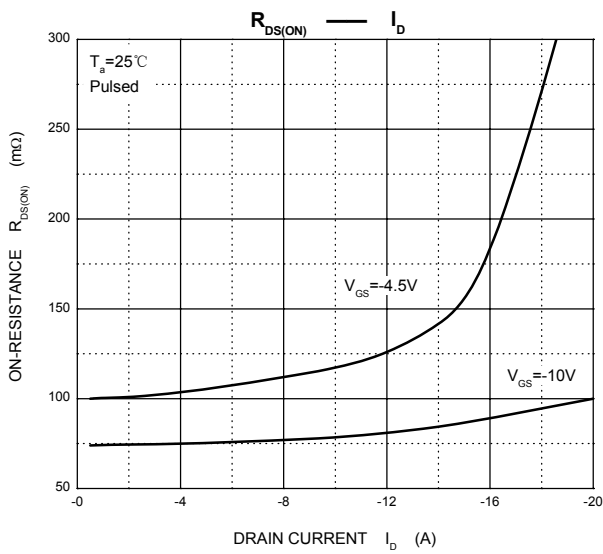
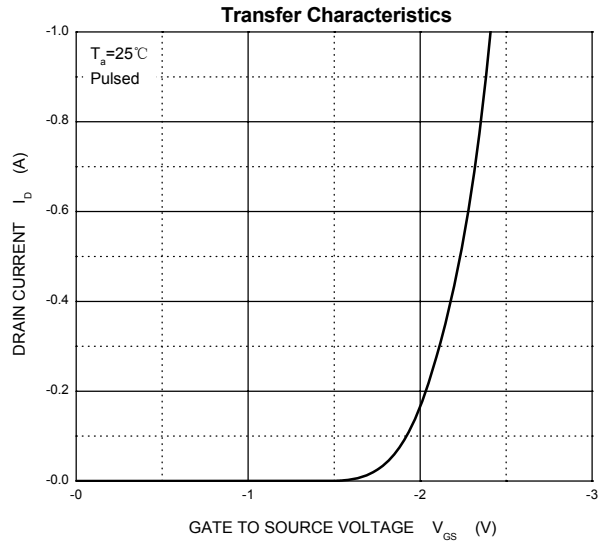
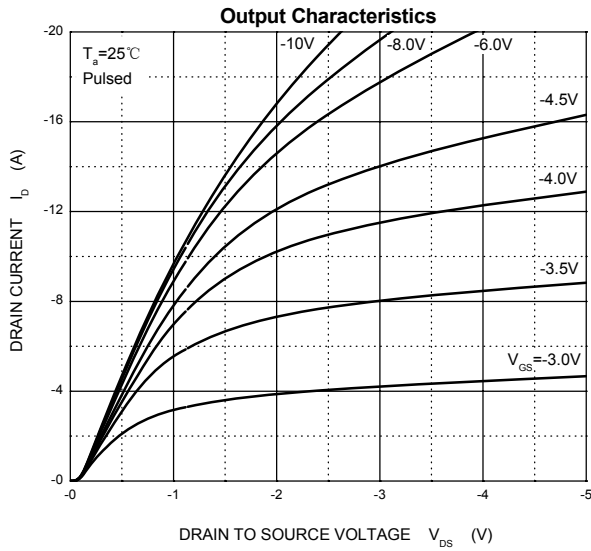
Electrical Characteristics (T_A=25°C unless otherwise specified)

Parameter	Symbol	Test Condition	Min	Typ	Max	Units
Static						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = -250μA	-30			V
Gate-Source Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = -250μA	-1		-3	
Gate-Source Leakage	I _{GSS}	V _{DS} = 0V, V _{GS} = ±20V			±100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = -30V, V _{GS} = 0V			-1	μA
Drain-Source On-State Resistance ^a	R _{DSON}	V _{GS} = -10V, I _D = -1.9A		0.158	0.190	Ω
		V _{GS} = -4.5V, I _D = -1.4A		0.275	0.330	
Forward Transconductance ^a	g _{fs}	V _{DS} = -5V, I _D = -1.9A	1			S
Dynamic^b						
Input Capacitance	C _{iss}	V _{DS} = -15V, V _{GS} = 0V, f = 1MHz		155		pF
Output Capacitance	C _{oss}			35		
Reverse Transfer Capacitance	C _{rss}			25		
Total Gate Charge	Q _g	V _{DS} = -15V, V _{GS} = -10V, I _D = -1.9A		4	8	nC
		V _{DS} = -15V, V _{GS} = -4.5V, I _D = -1.9A		2	4	
Gate-Source Charge	Q _{gs}	V _{DS} = -15V, V _{GS} = -4.5V, I _D = -1.9A		0.6		
Gate-Drain Charge	Q _{gd}			1		
Gate Resistance	R _g	f = 1MHz	1.7	8.5	17	Ω
Turn-On Delay Time	t _{d(on)}	V _{DD} = -15V, R _L = 10Ω, I _D = -1.5A, V _{GEN} = -10V, R _g = 1Ω		4	8	ns
Rise Time	t _r			11	18	
Turn-Off Delay Time	t _{d(off)}			11	18	
Fall Time	t _f			8	16	
Turn-On Delay Time	t _{d(on)}	V _{DD} = -15V, R _L = 10Ω, I _D = -1.5A, V _{GEN} = -4.5V, R _g = 1Ω		36	44	
Rise Time	t _r			37	45	
Turn-Off Delay Time	t _{d(off)}			12	18	
Fall Time	t _f			9	14	
Drain-source Body diode characteristics						
Continuous Source-Drain Diode Current	I _S	T _C = 25°C			-1.75	A
Pulse Diode Forward Current ^a	I _{SM}				-10	
Body Diode Voltage	V _{SD}	I _S = -1.5A		-0.8	-1.2	V

Notes :

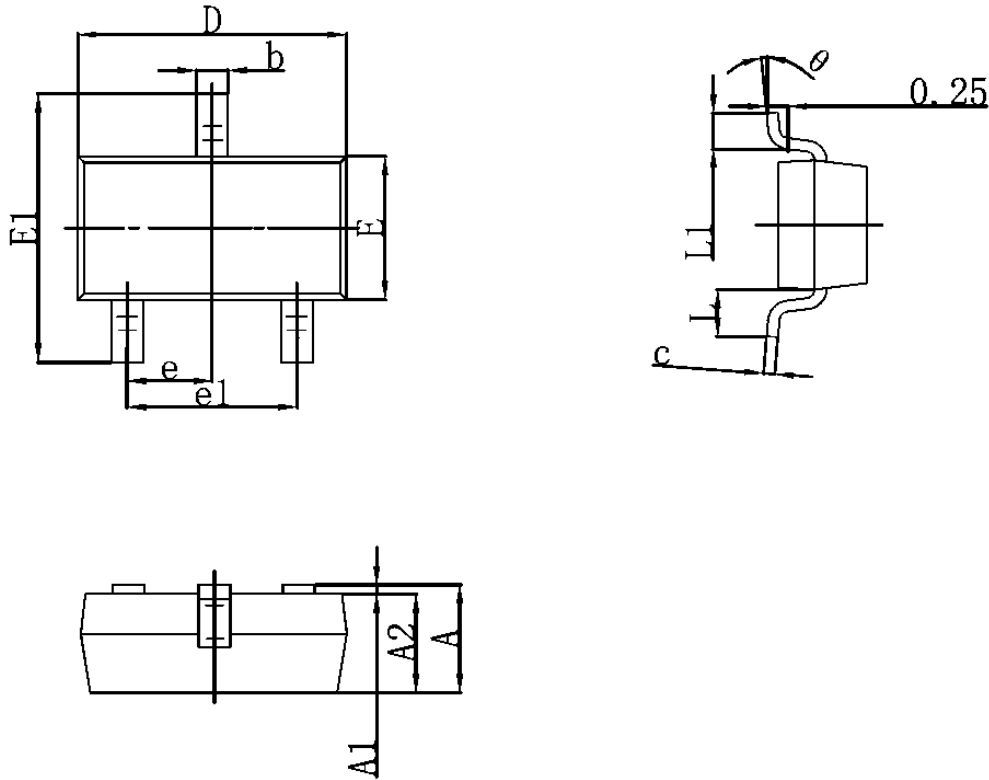
- a. Pulse Test : Pulse Width ≤300μs, Duty Cycle ≤2%.
- b. Guaranteed by design, not subject to production testing.

Typical Characteristic Curves



Mechanical Data

SOT-23 PACKAGE OUTLINE DIMENSION



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP		0.037 TYP	
e1	1.800	2.000	0.071	0.079
L	0.550 REF		0.022 REF	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°